

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A low-pressure mercury vapor discharge lamp comprising a light-transmitting discharge vessel, the discharge vessel enclosing, in a gastight manner,

a discharge space provided with an inert gas mixture and with mercury,

a first portion of the discharge vessel being provided with a first electrode arranged in the discharge space and with a luminescent layer,

which first portion, in operation, radiates light in a first range of the electromagnetic spectrum from 100 to 1000 nm,

a second portion of the discharge vessel being provided with a second electrode arranged in the discharge space,

which second portion, in operation, radiates light in a second range of the electromagnetic spectrum from 100 to 1000 nm, said second range being different from the first range, ~~characterized in that~~ wherein:

the low-pressure mercury vapor discharge lamp comprises current supply conductors for receiving a direct current, and

the discharge space contains only two electrodes.

Claim 2 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 1, ~~characterized in that~~ wherein an amalgam ~~(4)~~ is provided in the discharge vessel ~~(1)~~.

Claim 3 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 2, wherein ~~characterized in that~~ the amalgam ~~(4)~~ is provided in the region between the first and the second portion ~~(11, 21)~~ of the discharge vessel ~~(1)~~.

Claim 4 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 2, wherein ~~characterized in that~~ the amalgam is provided in the region of the electrode ~~(12)~~ of the portion ~~(11)~~ of the discharge vessel ~~(1)~~ with the lowest color temperature.

Claim 5 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 2 or 4, wherein ~~characterized in that~~ the amalgam is provided in the region of the first electrode ~~(12)~~, and a further amalgam ~~(24)~~ is provided in the region of the second electrode ~~(22)~~.

Claim 6 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 1, 2, 3 or 4, wherein ~~characterized in that~~ a cold spot is provided in the discharge vessel ~~(1)~~.

Claim 7 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 6,

~~wherein characterized in that~~ the cold spot is provided in the region between the first and the second portion ~~(11, 21)~~ of the discharge vessel ~~(1)~~.

Claim 8 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 6 in combination with claim 2, 3 or 4 or as claimed in claim 7 in combination with claim 2, 3 or 4, ~~wherein characterized in that~~ the amalgam is provided in the region of the cold spot.

Claim 9 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 1, 2, 3 or 4, ~~wherein characterized in that~~ a wall of the second portion ~~(21)~~ of the discharge vessel ~~(1)~~ is made from a glass which is transmissive to UV.

Claim 10 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 1, 2, 3 or 4, ~~wherein characterized in that~~, in operation, the luminescent layer ~~(16)~~ yields a spectral characteristic

stimulating melatonin built-up in a human subject or yields a spectral characteristic suppressing the melatonin built-up or stimulating melatonin degradation in the human subject.

Claim 11 (currently amended): ~~A~~The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 1, 2, 3 or 4, ~~wherein~~characterized in that the second portion~~-(21)~~ of the discharge vessel~~-(1)~~ is provided with a further luminescent layer~~-(26)~~.

Claim 12 (currently amended): ~~A~~The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 11, ~~wherein~~characterized in that, in operation, the further luminescent layer~~-(26)~~ yields a spectral characteristic suppressing the melatonin built-up in a human subject or stimulating melatonin degradation or yields a spectral characteristic stimulating melatonin built-up in the human subject.

Claim 13 (currently amended): ~~A~~The low-pressure mercury vapor discharge lamp ~~as~~-claimed in claim 10 and 12, ~~wherein~~characterized in that, in operation, the luminescent layer ~~(16)~~ yields a spectral characteristic stimulating melatonin built-up in the human subject and that the further luminescent layer ~~(26)~~ yields a spectral characteristic suppressing the melatonin built-up or stimulating melatonin degradation in the human subject.

Claim 14 (withdrawn - currently amended): ~~A~~The low-pressure mercury vapor discharge lamp ~~as~~-claimed in claim 10, 12 or 13, ~~wherein~~characterized in that the spectral characteristic is specified by an output fraction of melatonin suppressive radiation  $R_{\text{sub.sr}}$  and light output  $L_{\text{sub.o}}$ , the melatonin suppressive radiation being  $R_{\text{sub.sr}}$  greater than or equal to 0.45 Melatonin Watt/Watt and the light output being  $L_{\text{sub.o}}$  less than or equal to 60 lumen/Watt.

Claim 15 (withdrawn - currently amended): ~~A~~The low-pressure mercury vapor discharge lamp ~~as~~-claimed in claim

10, 12 or 13, ~~wherein~~ characterized in that the spectral characteristic is specified by an output fraction of melatonin suppressive radiation  $R_{sub.sr}$  and light output  $L_{sub.o}$ , the melatonin suppressive radiation being  $R_{sub.sr}$  greater than or equal to 0.6 Melatonin Watt/Watt and the light output being  $L_{sub.o}$  greater than or equal to 100 lumen/Watt, the discharge lamp having a color temperature of greater than or equal to 6500 K.

Claim 16 (withdrawn - currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 10, 12 or 13, ~~wherein~~ characterized in that the spectral characteristic is specified by an output fraction of melatonin suppressive radiation  $R_{sub.sr}$  and light output  $L_{sub.o}$ , the melatonin suppressive radiation being  $R_{sub.sr}$  less than or equal to 0.2 Melatonin Watt/Watt and the light output being  $L_{sub.o}$  greater than or equal to 100 lumen/Watt.

Claim 17 (currently amended): ~~A~~ The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 11,

~~characterized in that~~wherein the luminescent layer~~-(16)~~  
of the first portion~~-(11)~~ comprises a luminescent  
material emitting UV-A radiation, and in that the further  
luminescent layer~~-(26)~~ of the second portion~~-(21)~~  
comprises a luminescent material emitting UV-B radiation  
or emitting UV-A and UV-B radiation.

Claim 18 (currently amended): ~~A-~~The low-pressure mercury  
vapor discharge lamp ~~as~~-claimed in claim 1, 2, 3 or 4,  
~~characterized in that~~wherein the low-pressure mercury  
vapor discharge lamp is adapted to receive an alternating  
current.

Claim 19 (currently amended): ~~A-~~The low-pressure mercury  
vapor discharge lamp ~~as~~-claimed in claim 1, 2, 3 or 4  
~~characterized in that~~wherein the discharge lamp comprises  
an at least partly substantially cylindrical discharge  
vessel~~-(1)~~ with a length  $L_{\text{sub.dv}}$  and with an internal  
diameter  $D_{\text{sub.in}}$ , and the ratio of the weight of mercury  
 $m_{\text{sub.Hg}}$  in the discharge vessel~~-(1)~~ and the product of  
the internal diameter  $D_{\text{sub.in}}$  and the length of the



discharge vessel L.sub.dv is given by the relation:  
$$m.\text{sub.Hg} \text{ divided by } (D.\text{sub.in} \text{ times } L.\text{sub.dv}) = C,$$
wherein C is less than or equal to 0.01  $\mu\text{g/mm}^2$ .

Claim 20 (currently amended): ~~A~~The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 19, ~~characterized in that~~wherein 0.0005 less than or equal to C less than or equal to 0.005  $\mu\text{g/mm}^2$ .

Claim 21 (withdrawn - currently amended): ~~A~~The low-pressure mercury vapor discharge lamp ~~as~~ claimed in claim 1, 2, 3 or 4 ~~characterized in that~~wherein the discharge lamp comprises an at least partly substantially cylindrical discharge vessel~~-(1)~~ with a length L.sub.dv and with an internal diameter D.sub.in, and the product of the mercury pressure p.sub.Hg and the internal diameter D.sub.in of the discharge vessel~~-(1)~~ is in the range 0.13 less than or equal to p.sub.Hg times D.sub.in. less than or equal to 8 Pa.cm.

Claim 22 (withdrawn - currently amended): ~~A~~The low-pressure mercury vapor discharge lamp ~~as~~-claimed in claim 21, ~~characterized in that~~wherein the product of the mercury pressure p.sub.Hg and the internal diameter D.sub.in of the discharge vessel-(1) is in the range 0.13 less than or equal to p.sub.Hg.times.D.sub.in less than or equal to 4 Pa.cm.

Claim 23 (currently amended): The ~~A~~-low-pressure mercury vapor discharge lamp ~~as~~-claimed in claim 1, 2, 3 or 4, ~~wherein~~characterized in that the discharge vessel-(1) contains less than 0.2 mg mercury.

Claim 24 (currently amended): ~~A~~The compact fluorescent lamp comprising a low-pressure mercury-vapor discharge lamp ~~as~~-claimed in claim 1, 2, 3 or 4, ~~characterized in that~~wherein a lamp housing-(70) is attached to the discharge vessel-(1) of the low-pressure mercury-vapor discharge lamp, which lamp housing is provided with a lamp cap.

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Claim 25 (currently amended): ~~A~~ The compact fluorescent lamp ~~as claimed in claim 24, characterized in that~~ wherein the discharge vessel ~~(1)~~ of the low-pressure mercury-vapor discharge lamp is surrounded by a diffusely scattering light-transmitting envelope which is attached to the lamp housing ~~(70)~~.